

# Minnesota Water Energy Nexus Retreat

## Action Plan

September 6, 2018

**Goal:** This action plan was developed based on feedback provided as a result of the Minnesota National Governor's Association Water Energy Nexus Retreat convened August 3, 2018 where local and national experts presented and discussed water utility energy efficiency opportunities and constraints in an effort to expand and enhance Minnesota's water utility energy efficiency. The action plan is broken down into four key strategy areas: policy, finance, technical assistance, and workforce development.

**Participants:** This action plan was developed by the following retreat participants:

- State of Minnesota:
  - Governor's Office
  - Department of Commerce (COMM)
  - Pollution Control Agency (MPCA)
  - Department of Health (MDH)
  - Public Facilities Authority (PFA)
  - Environmental Quality Board (EQB)
  - Department of Natural Resources (DNR)
- University of Minnesota:
  - Center for Sustainable Building Research (UMN-CSBR)
  - Minnesota Technical Assistance Program (UMN-MNTAP)
- Cities or Wastewater Treatment Plant Regional Bodies
  - Metropolitan Council Environmental Services (MCES)
  - City of St. Cloud
  - Western Lake Superior Sanitary District (WLSSD)
- Associations
  - Minnesota Rural Water Association (MRWA)
  - Minnesota Wastewater Operator's Association (MWOA)
  - League of Minnesota Cities (LMC)
  - Minnesota Municipal Utilities Association (MMUA)

## Actions Items:

### I. POLICY

#### A. Action:

Evaluate ways the State can strengthen use of the B3 (Buildings, Benchmarks, and Beyond) Sustainable Buildings 2030 Wastewater Treatment Plant Review Process, an energy review process and set of minimum energy conservation measures that should be considered for wastewater treatment plant designs for new or major renovations at appropriate wastewater facilities. Look into opportunities to expand use for water treatment utilities. Under the Cost and Effectiveness Guidelines, B3 is currently required to be addressed in all wastewater treatment facility plans submitted to the Minnesota Pollution Control Agency (MPCA), as a part of the applications for Clean Water Revolving Fund (CWRP) funding from the Public Facilities Authority (PFA).

#### Sub-actions:

University of Minnesota, Center for Sustainable Building Research (UMN-CSBR) provide an update on number of wastewater treatment plants that have utilized the B3 Sustainable Buildings 2030 Wastewater Treatment Plant Review Process released January 2018.

- i. Evaluate other pathways or opportunities to strengthen the use of B3 Sustainable Buildings 2030 Wastewater Treatment Plant Review Process.
- ii. Examine the development of B3 Benchmarking, a tool to track and compare energy use on existing buildings, and B3 Sustainable Building Water Treatment Review Process for new or major renovations, for appropriate water treatment facilities.

#### Responsible Party:

Minnesota Department of Commerce (COMM)

#### Key Stakeholders:

MPCA, Minnesota Department of Health (MDH), PFA, UMN-CSBR and other identified parties.

#### B. Action:

Determine how MPCA and MDH can support the piloting of energy efficiency innovation at water utilities while maintaining compliance with their operating permits and creating public health or environmental risks.

#### Sub-actions:

- i. Evaluate where the MPCA could exercise its enforcement discretion authority to help encourage voluntary pollution reduction.
- ii. Compile communication material for how to work with the MPCA and MDH on this effort.
- iii. Examine what kinds of incentives the MPCA and MDH could give to owners of water and wastewater treatment facilities to make it worth the extra effort to take risks and pilot energy innovations.
- iv. Encourage field trips to water utilities, pre- and post-technology implementation to better track impact.

**Responsible Party:**

MPCA, MDH

**Key Stakeholders:**

PFA, Minnesota Rural Water Association (MRWA), Minnesota Wastewater Operator's Association (MWOA), Central States Water Environment Association – Minnesota Section - Resource Recovery and Energy Committee (CSWEA-MN R2E Committee), Metropolitan Council Environmental Services (MCES), COMM and other identified parties.

**C. Action:**

Work to establish a United States Department of Energy (USDOE) Industrial Assessment Center at University of Minnesota.

**Sub-action:**

- i. Contact USDOE to get information on how and when to apply to be a host state and identify potential support needed from the state. Prepare the application prior to December 31, 2022 to prepare for next round of applications in 2023.

**Responsible Party:**

University of Minnesota, Minnesota Technical Assistance Program (UMN-MNTAP)

**Key Stakeholders:**

MPCA, COMM and other identified parties.

**II. FINANCE****A. Action:**

Evaluate how to continue to better align state water utility investments and programs with energy efficiency.

**Sub-actions:**

- i. Map out status of alignment of state investments and water utility energy efficiency programs (Cost and Effectiveness Guidance, B3 Sustainable Buildings 2030 Wastewater Treatment Plant Review, general education, etc.).
- ii. Convene state partners to identify and review any other state incentives, regulation, and encouragement used to motivate water utility construction and major renovation.
- iii. Determine any gaps in opportunities to strengthen the alignment of state investment and programs with water utility energy efficiency.
  - a. Explore incentives for water utilities to perform an energy assessment when receiving state funds.
  - b. Evaluate if energy efficiency tools could be better leveraged.
  - c. Evaluate if state laws or rule inhibit value engineering, and/or do some analysis and trade-off of engineering specs. "Value engineering" includes actions like installing two small blower motors instead of one large motor so in the years before a utility reaches capacity it can use one small blower motor at optimum speed for the lower capacity loads, instead of installing one big blower motor that will use too much energy for several years until capacity reaches the right level. Show them how to avoid investing in equipment that is oversized for the current job just because it will do the job when plant

- reaches capacity. Potentially engage Minnesota's American Council of Engineering Companies Water Resources Committee with this questions.
- d. If value engineering is permitted, evaluate value engineering practices for receipt of state funding for utility upgrades or expansions.

**Responsible Party:**

COMM

**Key Stakeholders:**

MPCA, PFA, MDH and other identified parties.

*III. TECHNICAL ASSISTANCE*

**A. Action:**

Develop a strategy for the State to offer active outreach to energy intensive, small (less than 1 million gallons of flow per day) and midsize (between 1 – 5 million gallons of flow per day) wastewater utilities about energy efficiency that are in process of making capital upgrade decisions; the key goal being to show operators the potential cost savings of efficiency and installation measures at their facility. Determine how to expand strategy to water treatment utilities.

**Sub-actions:**

- i. Determine a method for the state to attain and input data into the B3 Benchmarking Tool for all public water utilities statewide. Explore if additional questions, such as total annual energy consumption, could be added to MPCA's annual required survey, to collect wastewater treatment energy data, and determine a similar method to attain public water treatment plant energy data.
- ii. Determine a method to use existing state data to prioritize outreach:
  - a. Use B3 Benchmarking to determine wastewater treatment facility energy performance in the lowest 25% level. Use for water treatment if available.
  - b. Use the DNR Water Conservation Reporting tool to determine which cities have high water loss and other water use concerns.
  - c. Use DNR groundwater data to prioritize areas where groundwater availability is limited.
  - d. Use the State Auditor's Transparency Tool to understand infrastructure needs and aging systems.
  - e. Use MPCA wastewater treatment plant component data to identify specific types of facilities for specific types of improvements.
  - f. Identify other water utility data, and leverage as appropriate
- iii. Explore the needs to expand UMN-MNTAP energy assessment capabilities and intern program to assist small water utilities in analyzing energy use and savings opportunities.
- iv. Provide small water utilities case studies and content of examples of potential savings when combining water and energy nexus efficiencies into their capital improvement projects.
- v. MDH district engineers could distribute resources on energy efficiency strategies that direct water treatment operators to website resources and people to contact for technical assistance during inspections.
- vi. Find out if incentives to cut costs are being stymied by the savings going back to a city's general funds rather than back to the utility to re-invest in upgrades or staff.
- vii. Determine how to expand strategy to water treatment utilities.

**Responsible Party:**

COMM

**Key Stakeholders:**

MPCA (including GreenStep Cities partners), MDH, MWOA, MRWA, UMN-MNTAP, Department of Natural Resources, (DNR) and other identified parties.

**B. Action:**

Coordinate with MRWA, MWOA, UMN-MNTAP, CSWEA - MN R2E Committee, MN American Water Works Association, and others to coordinate outreach and education on small and midsized utility energy efficiency practices, energy innovation like CHP, available state technical assistance programs, and potential equipment upgrades. Leverage existing resources and eliminate gaps in assistance to water utilities to meet state energy efficiency, renewable energy and greenhouse gas (GHG) reduction goals. This meets the stated need to have trusted third-party advisors giving information and doing outreach rather than state regulators or engineers who may be bidding on the project.

**Sub- actions:**

- i. Evaluate if MRWA, new technical assistance energy assistance program, can focus on energy, to address needs of medium and small utilities. If so, coordinate with MRWA.
- ii. Determine how to leverage Green Corps and GreenStep Cities Programs to assist small water utilities to communicate to their city management and city council regarding the cost savings opportunities in and resources available for the water utility for city support to implement energy saving opportunities.
- iii. Convene all water utility third party-associations to develop a master strategy for active outreach on energy efficiency, innovation and production (CHP).
- iv. Compile a list of all technical assistance and financing programs offered within the state including: MRWA energy efficiency grant and financing applicable for energy efficiency, Local Energy Efficiency Program, Guaranteed Energy Savings Program, UMN-MNTAP, etc.
- v. Develop or compile appropriate case studies/content:
  - a. MCES may be able to support education by providing case studies of work implemented and the benefits and costs associated with those projects. MCES has had great success in making aeration processes more efficient, retro fitting lighting fixtures, and recommissioning facilities.
  - b. Develop an energy innovation video presentation that showcases MN success stories with the message of cost savings while still achieving permit compliance
- vi. Explore methods to provide hands on training to achieve operational changes highlighted in the case studies or videos.
- vii. If value engineering is allowed, ask training groups to collaborate on trainings for consulting engineers to encourage them to employ "value engineering" to meet utility and state energy efficiency and GHG reduction goals.
- viii. Engage other associations not currently engaged to determine participation options with energy and water efficiency.

**Responsible Party:**

COMM

**Key Stakeholders:**

MPCA, PFA, MRWA, MWOA, UMN-MNTAP, American Water Works Association, MCES and other identified parties.

**C. Action:**

Communicate to stakeholders that Combined Heat and Power (CHP) can be included in the Conservation Improvement Program.

**Sub-actions:**

- a. MCES has CHP systems at its facilities and is installing new ones. MCES has received rebates from utilities for this work. Support communication activities on these and other CHP projects that were included in the Conservation Improvement Program.

**Responsible Party:**

COMM

**Key Stakeholders:**

UMN-MNTAP, MPCA (including GreenStep Cities partners), MDH, MWOA, MRWA, MCES, and other interested parties.

**D. Action:**

Examine the needs to fully utilize UMN-MNTAP's cohort training model to develop peer-to-peer learning experiences on energy efficiency and renewable energy for small wastewater utility operators. Determine if model is applicable to water treatment utilities.

**Sub-actions:**

- i. Determine the needs to enable small operators to visit other small wastewater utilities that made upgrades and the best method to connect them with a regional third-party trusted advisor.
- ii. Identify funding that can be used for peer-to-peer learning experiences.
- iii. Enlist wastewater utilities that have already made the upgrades as mentors to help other wastewater utilities.
- iv. Evaluate if hands on training could be provided in this model to achieve operational changes highlighted in any developed case studies or videos.
- v. Determine if model is applicable to water treatment utilities.

**Responsible Party:**

MWOA, MRWA, UMN-MNTAP, MPCA

**Key Stakeholders:**

League of Minnesota Cities (LMC), MPCA, MDH, COMM and other interested parties.

**E. Action:**

Educate local elected officials on cost savings that can be delivered by water utility energy innovation. Use existing groups and meetings like the Municipal Association meetings, and presentations to city councils.

**Sub-actions:**

- i. Develop water utility energy efficiency and renewable curriculum for city management.
- ii. MCES has done presentations such as these and could offer examples to support utilities.
- iii. Support energy efficiency at water utilities additions to curriculum for City Administrators.
- iv. Partner with LMC, GreenStep Cities, Clean Energy Resource Teams (CERTs) to educate and present to local elected officials.
- v. Enlist UMN-MNTAP to show the science of efficiency and lead with information on cost savings that are achievable. Where local budgets are tight, these types of low cost changes to operations could create cost savings that may allow local governments to retain water utility positions.
- vi. Help city councils understand this is bigger than concerns about selling water, hook-up fees, etc.
- vii. Collect case studies of cost reductions from energy efficiency that are then applied to saving water utility staff. Share this information with local councils.

**Responsible Party:**

LMC

**Key Stakeholders:**

MPCA (Including GreenStep Cities), COMM, UMN-MNTAP, MCES, CERTs, RETAP (Retired Engineers Technical Assistance Program) and other interested parties.

**F. Action:**

Create a one-stop shop for water utility energy efficiency resources that compiles resources on one website, including information on rebates, offered by each utility.

**Sub-action:**

- i. Determine who will collect and update information and which organization can host this website and keep it up to date.

**Responsible Party:**

UMN-MNTAP

**Key Stakeholders:**

MPCA (including GreenStep Cities), MRWA, MWOA, COMM, CSWEA – R2E and other interested parties.

#### *IV. WORKFORCE*

**A. Action:**

Establish a stakeholder group that develops a comprehensive plan to address workforce planning with the goal of ensuring there are enough trained and competent utilities operators to meet the job demands.

**Sub-action:**

- i. Determine five and ten-year potential for turnover of critical water utility jobs to enable the state to plan for upcoming retirements and focus efforts on recruiting and training the future water workforce.

- ii. Determine what kinds of incentives the state and local governmental units can offer to utility operators to take jobs and remain in small towns.
- iii. Add a question about potential of turnover in critical jobs on the annual wastewater reporting report.
- iv. Develop a “water heroes” video series that showcases the important work of water and wastewater operators.
- v. Re-brand the jobs as one that encompasses environmental stewardship.

**Responsible Party:**

MPCA

**Key Stakeholders:**

MWOA, DEED (Department of Employment and Economic Development), MDE (Minnesota Department of Education) and other identified parties.

**B. Action:**

Evaluate viable options for expanding the pool of eligible utility operators and expand the job region for operators qualified in Minnesota.

**Sub-actions:**

- i. Determine whether there are important state differences that must be addressed in certification exams and examine whether a separate section for each state could be added to a regional certification that would satisfy this need.
- ii. Consider engaging multiple states in a regional workforce initiative - see New England Water Environment Association (NEWEA).
- iii. Make utility jobs more appealing in terms of wages, benefits, and image. MCES has been going out into the public to inform more people about the career opportunities available in MCES. MCES has participated in open houses at a number of different types of job fairs and has offered tours to different groups to encourage people to apply to work for MCES. MCES could offer to share some of the materials, groups we have reached out, and the effectiveness of our efforts.

**Responsible Party:**

MPCA

**Key Stakeholders:**

COMM, MWOA, MCES, DEED and other identified parties.

**C. Action:**

Examine new models for developing the water workforce.

**Sub-actions:**

- i. Evaluate potential in MN for a program, like Water Warriors run by the New England Water Environment Association (NEWEA) that reaches out to military veterans, many of whom have skills that are transferrable to skills needed in the water sector. See: <https://www.newea.org/about-us/committees/veterans-workforce-development-committee/>



- ii. Evaluate whether a high school program, like Hartford Connecticut's Water Boot Camp, where students complete classroom learning and are then embedded at a water or waste water plant, can help to recruit the next generation of water workers.

**Responsible Party:**

Community Colleges (Vermillion and St. Cloud)

**Key Stakeholders:**

MPCA, MWOA, DEED and other identified parties.

**D. Action:**

Demonstrate the link between water conservation and GHG reduction in curriculum to overcome the reluctance to embrace water conservation in a state that is water rich.

**Sub-actions:**

- i. Use reports that demonstrate the high impact that water conservation has on energy use reduction and GHG reductions.
- ii. Re-brand the jobs as one that encompasses environmental stewardship.

**Responsible Party:**

Community Colleges (Vermillion and St. Cloud)

**Key Stakeholders:**

MWOA, MPCA and other identified parties.

**E. Action:**

Develop policy that helps identify and incentives opportunities for regionalization/consolidation of utilities.

**Sub-action:**

- i. Look into regional consolidation to help equalize pay grades for utility operators and spread the rate base over a larger population. Consider offering incentives for consolidation to utilities that have incurred unacceptable levels of violations.
- ii. Identify funding sources to support consolidation incentives.
- iii. Identify the need for no-cost policies to encourage consolidation like offering protection from liability from former violations to a utility that is taking over a troubled utility that incurred those violations

**Responsible Party:**

MPCA

**Key Stakeholder:**

LMC, MWOA, DEED and other identified parties.